

OLYMPIC COAST NATIONAL MARINE SANCTUARY

A REPORT FOR SANCTUARY ADVISORY COUNCIL MEMBERS

REPORTING PERIOD: MAR 21, 2014 – MAY 15, 2014

ABOUT THE SANCTUARY

Olympic Coast National Marine Sanctuary spans 3,189 square miles of marine waters off the rugged Olympic Peninsula coastline. The sanctuary extends 25 to 50 miles seaward, covering much of the continental shelf and several major submarine canyons.

The sanctuary protects a productive upwelling zone - home to rich marine mammal and seabird faunas, diverse populations of kelp and intertidal algae, and thriving invertebrate communities. The sanctuary is also rich in cultural resources, with over 150 documented historical shipwrecks and the vibrant contemporary cultures of Makah, Quileute, and Hoh Indian Tribes, and Quinault Nation.

but a state leader". Billy, known for his warm personality and ability to unite people of diverse viewpoints, will be greatly missed.

OFFICE REPORT

OLYMPIC COAST NATIONAL MARINE SANCTUARY NEWS AND PROGRAM UPDATES

Organized by Olympic Coast National Marine Sanctuary (OCNMS or sanctuary) management plan priority areas

REMEMBERING BILLY FRANK JR.

Billy Frank Jr., a Nisqually elder and fisherman who served for more than half a century as the voice of Northwest tribes and chairman of the Northwest Indian Fisheries Commission for the past 30 years, passed away unexpectedly on May 5th. Mr. Frank was recognized as an eloquent and influential tribal leader, urging people to work together to restore salmon and their habitat. He was a champion of tribal treaty rights, having been in the front lines of the salmon wars leading to the landmark Boldt decision in 1974. Speaking at a memorial attended by over 6000 people, Governor Inslee called Billy Frank Jr. "not just a tribal leader



ACHIEVE EFFECTIVE AND COORDINATED MANAGEMENT

Olympic Coast National Marine Sanctuary and Olympic National Park Joint Staff Meeting

To improve coordination and collaboration, staff from Olympic National Park and Olympic Coast National Marine Sanctuary met together to identify areas of common interest, discuss past successes in working together, and where we might increase our work together. While sanctuary and park leadership and staff meet frequently, this was the first joint staff meeting across different management units. The superintendents plan to review staff suggestions and identify priority actions for the next year.

OCNMS and US Coast Guard Air Station Collaborate on Fishery Enforcement Maps

Olympic Coast National Marine Sanctuary GIS Cartographer Nancy Wright and LT Jacob Marks, Operations Administrator from the CG Air Station SFO Port Angeles, WA designed a map of the Cape Flattery Control Zone and rockfish closure areas for an educational presentation to Coast Guard pilots. Within the Cape Flattery Control Zone, the Coast Guard restricts certain fishing practices. The new maps were prepared as posters for the Coast Guard office and digital for presentation graphics in pilot training modules. LT Marks also took posters of OCNMS flight regulations that protect marine mammals and seabirds by keeping motorized aircraft above 2,000 feet above the water within one nautical mile of the coastline.

Olympic Coast Federal Managers Meeting

Olympic Coast National Marine Sanctuary Superintendent Carol Bernthal, Olympic National Park Superintendent Sarah Creachbaum, and Washington Islands National Wildlife Refuge Complex Project Leader Jennifer Brown-Scott and their deputies met to discuss issues of common interest. The sanctuary, park and refuges off the Olympic Coast of Washington share resources, boundaries and many issues. Field staff from Representative Kilmer's North Olympic Peninsula, Judith Morris, also attended the meeting. Some of the issues discussed included planned seasonal operations and programs for all three agencies, the recent volunteer efforts to collect marine debris on the coast, the park Wilderness Stewardship Plan, a proposed Marine Campus on the Port Angeles waterfront, and a collaborative seabird survey using Unmanned Aircraft Systems.

Improving Enforcement within Olympic Coast National Marine Sanctuary

NOAA Office of Law Enforcement and Olympic Coast National Marine Sanctuary (OCNMS) staff sponsored a bi-annual meeting of the OCNMS Enforcement Technical Advisory Committee (TAC). NOAA meets twice a year with the Washington Department of Fish and Wildlife (WDFW) and the U.S. Coast Guard to discuss enforcement issues in the sanctuary.

2013 Vessel Compliance in Olympic Coast National Marine Sanctuary

In 1994 the International Maritime Organization designated a voluntary vessel routing measure to protect the Olympic Coast National Marine Sanctuary at its time of designation. The primary benefit of this Area to be Avoided (ATBA) is to mitigate against the potential of an oil spill off the coast of Washington. The ATBA has been a very successful partnership between NOAA, USCG, and the maritime industry. The sanctuary has monitored vessels in the sanctuary and ATBA since 1998, and has reported on estimated compliance since 2004. In 2013, the estimated compliance rate for the ATBA was 97% for all vessels over 400 gross tons, with the compliance higher for large commercial vessels. In this year's report the sanctuary has, for the first time, provided vessel density maps for 5 different vessel classes for the entire coast of Washington. The estimated compliance rates, by year and vessel type, can be viewed online at: <http://olympiccoast.noaa.gov/protect/incidentresponse/vesseltraffic.html>.

CONDUCT COLLABORATIVE RESEARCH, ASSESSMENTS AND MONITORING TO INFORM ECOSYSTEM-BASED MANAGEMENT

Sanctuary Staff Attend Visual Survey Methods Workshop

Research Coordinators from Olympic Coast National Marine Sanctuary and Cordell Bank National Marine Sanctuary attended a workshop convened by the U.S. and Canada Technical Subcommittee (TSC) of the Canada-U.S. Groundfish Committee. The *Visual Survey Methods Workshop* was hosted at the Alaska Fisheries Science Center facilities on April 8-9 in Seattle, WA and funded by the Pacific States Marine Fisheries Commission. Participants provided a pre-workshop summary of their agency's survey goals and methodologies to aid in break out discussions during the workshop. They also submitted two-page dive summary profiles of their respective work, emphasizing visual surveys with submersibles and remotely operated vehicles (ROVs), that was made available to all participants at the workshop. Quantifiable underwater video surveys are becoming more commonplace these days and are being looked upon as complimentary to more traditional methods for fish stock assessments (particularly in untrawlable survey areas), habitat characterizations and other resource management needs. Participants included representatives from the following agencies and organizations: Alaska Dept. of Fish and Game, Alaska Fisheries Science Center, International Pacific Halibut Commission, Department of Fisheries and Oceans, Canada (DFO), Washington Dept. of Fish and Wildlife, Northwest Fisheries Science Center, Olympic Coast National Marine Sanctuary, Quinault Indian Nation, Washington State Univ. & Humboldt State Univ., Oregon Dept. of Fish and Wildlife, Partnership for Interdisciplinary Study of Coastal Oceans (PISCO), Cordell Bank National Marine Sanctuary, Southwest Fisheries Science Center, Moss Landing Marine Labs and The Nature Conservancy. A summary report has just been published and will be available on the TSC website soon or can be requested now via Ed Bowlby, OCNMS Research Coordinator.

OCNMS Vessel *RV Tatoosh* Gets Technical Upgrade For Seafloor Mapping

OCNMS has leased the gyroscope and inertial movement unit (IMU) components of its multibeam sonar system since it began seafloor mapping from the *RV Tatoosh* in 2010. This year OCNMS received an upgraded gyro/IMU system from NOAA's Navigational Response Branch and installed it permanently on the vessel. The *RV Tatoosh* equipment was then professionally surveyed for accurate placement and taken to Lake Washington for equipment testing and calibration by hydrographic technicians at the NOAA Office of Coast Survey, Pacific Hydro Branch. This highly technical upgrade improves the quality of sonar data that can be produced from *RV Tatoosh* during seafloor surveys. During the summer of 2014, the OCNMS mapping team expects to map for 15-30 days from Quilleute Needles to Teahwhit Head along the central outer coast.

Puma UAS Surveys With USFWS

NOAA's Puma Unmanned Aircraft System (UAS) will return to OCNMS for two to three days in June 2014 to refine flight approaches around islands supporting seabird colonies. As in 2013, the primary mission is to continue evaluating this platform with colleagues from US Fish and Wildlife Service (USFWS) as a potential substitute for conducting helicopter surveys of the three coastal wildlife refuges. Planning is also continuing for a more major survey effort with the Puma in 2015, when an upgraded camera system with much higher resolution will be operating. OCNMS is also exploring options with WDFW for having their fixed wing over-water seabird survey in 2015 to overlap with the Puma to compare results.

OCNMS Staff Lead Initiative to Develop ONMS Enterprise-Level Vessel Traffic Monitoring

Office of National Marine Sanctuaries (ONMS) is committed to natural resource protection including fragile shorelines and habitats for seabirds, marine mammals and fish. Monitoring shipping traffic is one of the ways that sanctuaries protect these special places. Some sanctuaries have *Areas to be Avoided* (ATBA) where ships must transit around designated areas. Others monitor ships for excessive speed through quiet sanctuary water or for excessive sound that disrupts mammal communication. Because monitoring vessel traffic is time consuming and requires a unique set of software, hardware and computer expertise, OCNMS staff is leading an effort to develop technical solutions generated from ONMS headquarters that will support all the sanctuaries as they increase their ability to work with the shipping industry to find solutions within our multi-use ocean environments.

Washington Department of Natural Resources Initiates OCNMS Seafloor Atlas Project

OCNMS has been conducting seafloor habitat mapping since 2000 and has 30 surveys in its library of benthic imagery and bathymetry. In addition, it has hundreds of ground-truthing points from its various research projects. The surveys make a “patchwork” of the seafloor because they have been conducted over a period when mapping hardware and software technology was coming-of-age, the use of backscatter data from sonar was in its early stages, and habitat classification was becoming standardized. In order to create a seamless Seafloor Atlas from the existing patchwork of OCNMS surveys using up-to-date technology, the WA Department of Natural Resources has contracted with the Oregon State University Seafloor Mapping Lab (Dr. Chris Goldfinger). OCNMS and the West Coast Regional Office of ONMS have also supported this contracted initiative. The Seafloor Atlas will be available in June 2015.

Deployment of OCNMS Oceanographic Moorings

The R/V *Tatoosh* is scheduled to deploy the sanctuary’s nearshore oceanographic moorings the week of May 19. As in previous years, they will be positioned from Makah Bay in the north to Cape Elizabeth in the south. Sensors will monitor temperature, salinity, dissolved oxygen, currents, and chlorophyll levels, which require monthly servicing through late September. A new survey technician will be coming aboard in early June to overlap with current OCNMS oceanography staff who is retiring at the end of the field season.

IMPROVE OCEAN LITERACY

Improving Awareness of Orca Whales



Olympic Coast National Marine Sanctuary was a co-sponsor with The Whale Trail, Feiro Marine Life Center, and Sound Community Bank for an orca educational event in Port Angeles on May 8. Noted author and marine conservationist Erich Hoyt, was the featured speaker of Orca Tour 2014, a month-long lecture series that follows The Whale Trail, a series of 50 sites where people in British Columbia, Washington, Oregon and California can view orcas and other marine mammals from shore (<http://thewhaletrail.org/orca-tour-2014-with-erich-hoyt>). Erich’s presentation was entitled *Adventures with Orcas in the North Pacific, from Stubbs to Iceberg* and was attended by approximately 100 people. The presentation promoted awareness of the endangered Southern Resident Orcas throughout their

range, which includes OCNMS waters, and to inspire ocean stewardship.

Sanctuary GIS Analysts Teach Marine Cartography at Friday Harbor Laboratories

GIS Analysts from Gulf of Farallones National Marine Sanctuary, Tim Reed, and Olympic Coast National Marine Sanctuary, Nancy Wright, were invited to teach Geographic Information Systems for Conservation Biology as part of Northeastern University’s Three Seas Program. The year-long Three Seas program provides graduate and undergraduate students an opportunity to study marine biology in the Pacific, the Caribbean, and the Atlantic Oceans. The Pacific Ocean component – taught at University of Washington’s Friday Harbor Laboratories on San Juan Island – emphasizes marine issues unique to Washington, Oregon, California and southern Canadian waters. Students researched sea star wasting disease, PCB levels in mussels, orca migration routes with whale watching impacts, and surveyed residents and visitors about tourism impacts on natural resources. ONMS staff taught the students to apply spatial thinking and GIS technology to their science and conservation projects.

Sanctuary Featured on KPTZ Radio Show, NatureNow

Sanctuary Superintendent Carol Bernthal was interviewed on *NatureNow*, produced by local community radio KPTZ. She highlighted the upcoming 20th anniversary of Olympic Coast National Marine Sanctuary, why the sanctuary exists and some of the critical issues facing the sanctuary, including climate change and ocean acidification.

OCNMS Volunteer of the Year 2013 Karsten Turrey

Karsten Turrey was nominated as the Volunteer of the Year in 2013 for his participation supporting several activities of Olympic Coast National Marine Sanctuary (OCNMS). Karsten was a 17 year old Natural Resources student at North Olympic Peninsula Skills Center when he joined the 2013 Olympic Coast Discovery Center (OCDC) docent training. In addition to contributing over 80 hours interacting with public visitors in the OCDC, Karsten assisted with collecting and entering data of monthly field sites for the Coastal Observation and Seabird Survey Team (COASST) and NOAA's Shoreline Debris monitoring program at the Elwha. He also joined a team to complete annual intertidal monitoring at Grenville Beach on the Quinault Nation's shore and was the first youth presenter to speak to the OCNMS Advisory Council in November 2013. A member of the Lower Elwha Klallam tribe, Karsten aspires to work in the natural resource management field in the future to serve his community. Karsten will be honored along with one volunteer nominee from each of the 14 sanctuaries in June at the Ocean Awards Gala during Capitol Hill Ocean Week in Washington, D.C, organized by the National Marine Sanctuary Foundation. Thank you for all your hard work Karsten!



North Olympic Watershed (NOW) Ocean Science Program Reaches 4th and 5th Grade Students

NOW Science is a NOAA B-WET (Bay Watershed Education Training) funded education program that promotes experiential learning and connects students to conservation issues in their local watersheds. A joint partnership between Feiro Marine Life Center and Olympic Coast National Marine Sanctuary, NOW Science recently conducted programming for fourth grade students and accompanying adult chaperones from Port Angeles. Fourth grade students observe, touch and learn about live, local, marine life including marine mammals in OCNMS waters and their role in the food chain, as well as collecting and observing plankton. Three of the Ocean Literacy principles are addressed in this program and students brainstorm ways they can decrease marine debris in our environment.

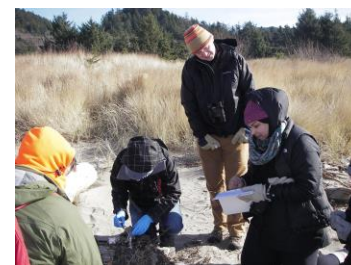
(NOW) Science also conducted spring field trip programs for fifth grade classes in the Sequim, Port Angeles, Joyce and Quileute School districts. OCNMS uses the Albatross as an ambassador, connecting students to the marine environment by tracking marine debris and its movements with ocean currents. In its sixth year, NOW science served 362 students and 42 adult chaperones and teachers from 15 different classrooms.

Sanctuary Researcher Featured at Seattle Aquarium's Marine Mammal Mania

Olympic Coast National Marine Sanctuary Research Coordinator Ed Bowlby was an invited speaker at The Seattle Aquarium for its Marine Mammal Mania Weekend event (<http://www.seattleaquarium.org/marine-mammal-mania>) on April 19. He was the featured sea otter expert staffing a table with informational display materials while interacting with hundreds of visitors. He also participated in feeding the aquarium's sea otters while answering questions concerning wild sea otters in Olympic Coast National Marine Sanctuary from an audience of over 40 people.

New Flock of Coastal Observation and Seabird Survey Team Volunteers Trained

Coastal Observation and Seabird Survey Team (COASST) hosted a free training for 20 volunteers on April 5 at the Clallam County Courthouse in Port Angeles. COASST is a citizen science project dedicated to involving volunteers in the collection of high quality data on the status of coastal beaches and trends of seabirds. Their goal is to assist government agencies and other organizations in making informed management and conservation decisions, and to promote proactive citizen involvement and action. COASST volunteers systematically count and identify bird carcasses that wash ashore along ocean beaches from northern California to Alaska.



Welcoming Migrating Birds at Shorebird Festival in Hoquiam



Olympic Coast National Marine Sanctuary hosted an informational booth in the exhibitor's hall of Grays Harbor Shorebird and Nature Festival April 26-27 in Hoquiam, Washington. Each spring, hundreds of thousands of shorebirds stop to rest and feed in Grays Harbor estuary on their migration northward. This concentration of birds offers people a great chance to view a number of shorebird species. The festival offered a series of speakers, guided tours through national wildlife refuges and local viewing areas, and an exhibitors' hall. The festival was attended by over 1,000 visitors.

Makah Chamber of Commerce Celebrates Bald Eagles

Olympic Coast National Marine Sanctuary attended the Makah Bald Eagle Festival on April 26, put on by the Makah Chamber of Commerce. Coastal Observation and Seabird Survey Team (COASST) Director and OCNMS partner Dr. Julia Parrish presented on bald eagles. Julia is the Associate Dean for the College of the Environment at the University of Washington, Director of the COASST Program and former Olympic Coast National Marine Sanctuary Advisory Board Member. Julia spent ten years with colleagues studying Common Murres on Tatoosh Island.

Newcomers Club Celebrates America's Ocean Treasures

Olympic Coast National Marine Sanctuary staff presented "Celebrating America's Ocean Treasures" at North Olympic Peninsula Newcomers Club luncheon. More than sixty members attended the presentation to learn about National Marine Sanctuaries, Olympic Coast and recreational tips for the outer coast.

Celebrating Earth Day with Peninsula College

Olympic Coast National Marine Sanctuary staff hosted a booth at Peninsula College's Earth Day Event on April 18. Interested students learned about sanctuary wildlife, habitats, programs as well as volunteer opportunities.

Sanctuary Presents to Port Angeles Rotary Club

Rotarian members learned about Olympic Coast National Marine Sanctuary when Sanctuary Superintendent Carol Bernthal delivered a luncheon speech to community and business leaders on April 30 on the wonders and work of Olympic Coast National Marine Sanctuary. Several members expressed interest in connecting community service projects with OCNMS.

Encouraging Marine Careers at NatureBridge Career Fair

Olympic Coast National Marine Sanctuary staff presented to Monterey Bay high school students and teachers at NatureBridge during its nearshore and marine research and sanctuary careers fair on April 15. Students learned about research conducted in the Elwha River nearshore, OCNMS and related careers. Students played an interactive careers game with student teams responsible for planning a research mission conducted in OCNMS.

Sanctuary Participates in Quileute Family Fun Night

Olympic Coast National Marine Sanctuary staff presented an educational activity for Quileute families at their Family Fun Night on May 6 in La Push. OCNMS provided an overview of marine debris and the life history of the albatross before dissecting an albatross bolus together with families. Short videos of albatross birds were also available to demonstrate the connection of the sanctuary with the Quileute coastline.

AmeriCorps Awarded to Olympic Coast National Marine Sanctuary

Olympic Coast National Marine Sanctuary (OCNMS) was selected for the 2014-2015 Washington Service Corps Individual Placement Program for their proposal "NOW (North Olympic Watershed) Science Education & Sanctuary Volunteer Stewardship". Through this program, an AmeriCorps volunteer will serve at OCNMS from September 1, 2014 through July 15, 2015.

CONSERVE NATURAL RESOURCES IN THE SANCTUARY

Washington Coastal Cleanup a Huge Success

The annual Earth Day shoreline cleanup took place on April 19, and was a resounding success. Washington Governor Inslee declared April 19 "Washington Coast Cleanup Day. Over 1,000 volunteers participated in efforts to collect and haul marine debris from the coastal beaches, even with inclement weather. Sites spanned the Columbia River to Cape Flattery and included locations along the Strait of Juan de Fuca this year as well. The sanctuary is a founding member of CoastSavers and contributes significantly to the organization's long range planning, funding and event coordination. OCNMS staff organized volunteers at the Neah Bay registration station and coordinated remote cleanups at Shi Shi and Portage Head beaches. Sanctuary Superintendent Carol Bernthal acted as beach captain at Shi Shi Beach, greeting and encouraging volunteers throughout the day as well as doing some heavy hauling herself. Volunteers sorted through marine debris to support recycling efforts, and to collect colorful and interesting items for a marine debris sculpture that is being commissioned by OCNMS. At the end of the day, volunteers gathered at various barbecues, hosted by Surfriders Foundation, Grass Roots Garbage Gang, DNC Parks & Resorts at Kalaloch and The Lost Resort at Lake Ozette to share stories, socialize and refuel.



Gulf of the Farallones and Olympic Coast National Marine Sanctuaries Collaborate on Evaluating Oil Spill Response Tools

Gulf of the Farallones National Marine Sanctuary (GFNMS) and Olympic Coast National Marine Sanctuary (OCNMS) Geographic Information System (GIS) analysts collaborated in a comprehensive review of the Southwest and Pacific Northwest Environmental Response Management Applications (ERMA®) for adaptation by the National Marine Sanctuary Program. ERMA is a web-based geographic information system (GIS) tool that helps emergency responders and environmental resource managers deal with incidents that may adversely impact the environment.

UNDERSTANDING THE SANCTUARY’S CULTURAL, HISTORICAL AND SOCIOECONOMIC SIGNIFICANCE

National Centers for Coastal Ocean Science (NCCOS) Supports Sanctuary Social Science

National Centers for Coastal Ocean Science (NCCOS) is providing funding to the Office of National Marine Sanctuaries (ONMS) to conduct a study in Olympic Coast National Marine Sanctuary. The work will advance NOAA's understanding of non-market values of marine activities and how they change with natural resource attributes. This supports OCNMS Management Plan objectives, State of Washington's Marine Spatial Planning, and next generation OCNMS Condition Report that will evaluate the status of ecosystem services.

SANCTUARY PERMITTING

Issued Permits and Approvals

OCNMS-2014-004 – John Mickett and Jan Newton, Applied Physics Lab, University of Washington

Project Title: A Multi-Platform, High-resolution coastal Ocean Observing Sensor Array for Researching Washington Coastal Waters and Ecosystem Response to Climate Change.

Permitted Activity: disturbance of the seafloor from anchor weights on two oceanographic moorings

Project Location: approximately 15 nm west northwest from La Push, Washington in approximately 100m water depth

Permit Duration: 5 years

Comment: This is a new permit for the Cha Ba and companion buoys with a fully recoverable design. No anchor weights are abandoned where these long-term deployments are anticipated. This permit is new, not renewed, because of personnel changes and a new permittee identified.

Pending Permit Requests

OCNMS-2014-003 – Joe Evenson, Washington Department of Fish and Wildlife

Project Title: WDFW/PSEMP Annual Winter Aerial Survey of Marine Birds and Mammals

Permitted Activity: low altitude overflight within the overflight restriction zone of Olympic Coast National Marine Sanctuary

Project Location: over waters of the Olympic Coast National Marine Sanctuary between Koitlah Point and Cape Flattery

Permit Duration: to be determined; probably a 5-year permit.

Comment: This permit has not been processed because there are ongoing discussions about additional winter seabird survey work, and flights in Strait that this permit request covers are not planned until 2015.

LEARN ABOUT YOUR SANCTUARY / NATURAL HISTORY

New information about resources in the sanctuary is always emerging. This section of the office report is reserved for sharing brief descriptions of recent studies, observations, findings, reports, and forecasts related to the sanctuary.

Study Reveals Mercury-Laced Fish in Olympic National Park's Mountain Lakes

A U.S. Geological Survey-led study of mercury contamination in popular sport fish, including rainbow and cutthroat trout, from 21 national parks in 10 western states documented mercury-tainted fish in the Olympic Mountain's high-elevation lakes. In the Olympics, fish were sampled from Upper Lena, Hoh, Gladys, Sun Up and Hagen lakes between 2008 and 2012. Mercury concentrations in fish at Olympic and most other parks were below the U.S. Environmental Protection Agency's threshold for safe human consumption. The study warned that Hoh Lake's levels "are likely to approach or exceed" safe human consumption levels in the near future. Overall mercury concentrations in Olympic were slightly higher than most parks in the study. Fishing is allowed in most of Olympic mountain lakes.

Mercury is one of the most widespread contaminants in the world, and exposure can impair brain and nervous system development, making it of particular concern for children and pregnant women. Wildlife can also be harmed by mercury,

with excess exposure resulting in reduced food-finding efficiency and reproductive problems. According to the USGS, mercury is distributed via the atmosphere on a global scale from volcanic eruptions and the burning of fossil fuels, such as coal-fired power plants. Human activities have increased mercury levels in the atmosphere by at least three fold over the last 150 years. See <http://pubs.usgs.gov/of/2014/1051/> for the full article. A 2009 state Department of Ecology assessment of Lake Ozette, a lowland lake near the coast, found concentrations higher than other lakes in the state.

Washington Sea Otters Tested Positive With Swine Flu Antibodies



Washington sea otters have tested positive for antibodies from the swine flu epidemic that was newsworthy to humans in 2009 (<http://www.kplu.org/post/researchers-we-shared-flu-virus-olympic-peninsula-sea-otters>). Olympic Coast National Marine Sanctuary collaborated with U.S. Geological Service (USGS), Washington State Department of Fish and Wildlife (WDFW) and U.S. Fish and Wildlife Service (USFWS) in 2011 to capture, tag, and take biopsies of sea otters using the R/V *Tatoosh* as the surgery platform. There were no significant sea otter die-offs between 2009 and 2011 and their population continues to show a positive trend, but the presence of swine flu virus was an unexpected result. The study has implications on how sea otters contacted the flu

virus (e.g. possibly via contact with elephant seals) and highlights the need for humans to minimize contact with marine mammals in general, since pathogens can be passed both ways. Also noteworthy was the increased percent of the sea otter population showing exposure to the protozoan parasite *Toxoplasma*. Collaboration in 2002 among OCNMS, USFWS and USGS lead to detection of 58% of Washington sea otters testing positive for *Toxoplasma*, while 2011 results indicated an increase to 97%. Toxoplasmosis has previously been diagnosed in sea otters dying in Washington and California.

Science Magazine Article Updated Summary of West Coast Sea Star Wasting Disease

An article *Death of the Stars* in the May 2 issue of Science magazine provided an updated summary about the mysterious sea star wasting disease that spread among sea stars on the West Coast of North America this past year. The article explains research being conducted to identify the pathogen and the search for clues about disease transmission and causes of the outbreak. Researchers are interested in ecological impacts from the loss or population reductions of these top predators from intertidal and subtidal marine systems. The article can be found at <http://www.sciencemag.org/content/344/6183/464.full>.



Migratory Animals Observed in Olympic Coast National Marine Sanctuary

Migratory birds making their annual journey to breeding grounds were observed in the northern region of Olympic Coast National Marine Sanctuary at Hobuck beach during a NOAA marine debris survey. Among the bird migrants included Black-bellied plovers, Dunlin in breeding plumage and a flock of Sandhill cranes. Recent Coastal Observation and Seabird Survey Team (COASST) data shows that very few dead birds are washing ashore, a trend that is expected and normal for this time of year. Marine mammals are also traveling north from their wintering grounds to their breeding grounds.

REGIONAL / NATIONAL ONMS NEWS

NOAA Releases Proposal to Expand Gulf of Farallones and Cordell Bank National Marine Sanctuaries

On April 14 Office of National Marine Sanctuaries (ONMS) announced a proposal to expand the boundaries of Gulf of Farallones and Cordell Bank National Marine Sanctuaries in California by a combine 2,775 square miles. The proposed expansion would protect the distinctive marine ecosystems off Marin, Sonoma and Mendocino counties to the north and west of the sanctuaries' current boundaries. These waters, including North American's most intense upwelling site off Point Arena, play a major role in nourishing the sanctuaries' incredibly productive feeding grounds, which attract endangered blue whales and humpback whales, sharks, salmon, and seabirds such as albatrosses and shearwaters that travel tens of thousands of miles. NOAA is accepting public and stakeholder comments on the proposal and related regulations through June 30.

NOAA Seeking New Members for MPA Federal Advisory Committee

NOAA is seeking nominations to fill ten vacancies on the Marine Protected Areas Federal Advisory Committee for 2014. The Committee advises the Departments of Commerce and the Interior on the development and implementation of a national system of marine protected areas to connect and strengthen the nation's MPA programs. In particular, nominations for representatives of ocean industries, commercial and recreational fishing, Tribal and/or Pacific Islanders, State coastal or ocean agencies, natural and social science, cultural resource management, non-consumptive uses and conservation interests are sought by May 30, 2014. For more information visit <http://marineprotectedareas.noaa.gov/fac/membership>.

NOAA Climate Stewards Project Inspires Award-winning Student Activists

Port Townsend, WA high-school student founders of Students for Sustainability arrived to Washington, D.C. on March 31 to meet with Members of Congress. The students founded the organization after studying climate change as part of the NOAA Climate Stewards Project Education Program, which promotes activities designed to strengthen ocean, climate and atmospheric science education. Their business plan to restart the school's recycling program saving their small school district more than \$10,000 annually and to plant more than 3,500 native species plants in their community won awards from the State of Washington and U.S. Environmental Protection Agency. While en route by bus, ferry, and train for their cross-country trip, the students collected petitions from other students at 55 stops between Seattle and the U.S. Capitol, where they advocated for government policies that promote sound science.

Flower Garden Banks National Marine Sanctuary Research Coordinator Honored



Emma Hickerson, Research coordinator for NOAA's Flower Garden Banks National Marine Sanctuary became one of six new members inducted into the Women Divers Hall of Fame (WDHOF) on March 29. Hickerson began working with the sanctuary as a volunteer in 1996 and has logged more than 1,200 scuba dives and 150 scientific expeditions during her 17 years as the site's research coordinator. The WDHOF is an international nonprofit professional honor society whose member contributions span a wide variety of disciplines including science and exploration. The class of 2014 was inducted at the Beneath the Sea Awards Banquet on Saturday in Secaucus, N.J. For more information visit <http://sanctuaries.noaa.gov/news/mar14/emma-hickerson.html>.

NEWS COVERAGE

Where To See the Gray Whales Along North Olympic Peninsula's Pacific Coast

The whale-watching season is now in full swing, with great views of the gray whale migration consisting of about 20,000 to 30,000 whales traveling north from Baja California to Alaska. Suggested viewing areas include Cape Flatter, First Beach, Rialto Beach and others along Hwy 101.

<http://www.peninsuladailynews.com/article/20140406/NEWS/304069974/where-to-see-the-gray-whales-8212-good-viewing-sites-along-north>

Guest Opinion Column: How Whale Watching Can Boost Olympic Peninsula Tourism

Executive Director Diane Schostak of Olympic Peninsula Visitor Bureau shared a summary of locations and species of whales to look out for from shore or boat, and how this can benefit the Olympic Peninsula economy.

<http://www.peninsuladailynews.com/article/20140406/NEWS/304069975/guest-opinion-column-how-whale-watching-can-boost-olympic-peninsula>

Whale Trail Tour to Make Two Stops On Peninsula

Author and marine conservationist Erich Hoyt is the featured speaker when The Whale Trail's Orca Tour 2014 comes to Port Townsend and Port Angeles to present on killer whales in the North Pacific.

<http://www.peninsuladailynews.com/article/20140505/news/305059979/whale-trail-tour-to-make-two-stops-on-peninsula>

Billy Frank Jr., Nisqually Elder Who Fought For Treaty Rights, Dies

Billy Frank Jr., a Nisqually elder and fisherman who served for more than half a century as the charismatic voice of Northwest tribes fighting to exercise their treaty rights, passed away.

<http://blogs.seattletimes.com/today/2014/05/billy-frank-jr-nisqually-elder-who-fought-for-treaty-rights-dies>

Remembering A Legend: Billy Frank Jr.

Billy Frank Jr., had a kinship with the natural world and his own heritage which was shared with those around him and had a deep impression at the state, and national levels.

<http://crosscut.com/2014/05/07/environment/119964/bill-frank-jr-tribute-martha-kongsgaard>

Billy Frank Changed Fish Debate Policy in Northwest

Billy Frank's activism began four decades before the court decision that would validate tribal rights to salmon and other fish, which comprise a critical component of traditional Northwest Indian cultural. His activism continues for nearly seven decades.

<http://www.yakimaherald.com/opinion/editorials/2157552-8/billy-frank-changed-fish-debate-policy-in-northwest>

The Fire That Was Billy Frank Jr.: Indian Country's Greatest Defender

Billy Frank Jr. was a living legend, visionary leader, hero, warrior, revolutionary, peacemaker and seminal figure in the northwest coastal tribes' struggle to protect their sovereignty and assert their treaty fishing rights.

<http://indiancountrytodaymedianetwork.com/2014/05/07/fire-was-billy-frank-jr-indian-countrys-greatest-defender-154761>

Kilmer Advocates For Competition to Reduce Ocean Acidification

Facing a Congress that is rarely able to act on contentious topics, U.S. Representative Derek Kilmer believes he has found a way to have more research done on ocean acidification without relying on new taxpayer dollars.

<http://www.thenewtribune.com/2014/05/13/3192748/kilmer-advocates-for-competition.html>

New Study: Acidifying Ocean Destroying Sea Butterflies

Tiny, delicate marine snails called pteropods are a key part of the marine food web. New research indicates they are dissolving to a greater extent than previously thought because of ocean acidification.

<http://earthfix.opb.org/water/article/new-study-acidifying-ocean-impacting-unprecedented>

Slideshow: Sea Stars Dying in Mysterious Plague

Sea stars, one of the most iconic animals of North America's coastal waters, are succumbing to an unknown, gruesome disease. The massive outbreak has researchers baffled because the syndrome is far more widespread and afflicting more species than in the past.

<http://news.sciencemag.org/plants-animals/2014/05/slideshow-sea-stars-dying-mysterious-plague>

Quinault Officials Say Seawall Breached at Taholah, Declare Emergency

The Quinault Indian Nation asked the federal government for help to forestall encroachment of the ocean in the lower portions of Taholah.

<http://thedailyworld.com/news/local/quinault-officials-say-seawall-breached-taholah-declare-emergency>

Young Humpback Whale Freed From Crab Pot Gear

Three marine mammal researchers from the nonprofit Cascadia Research freed a young humpback whale that was entangled in crab pot gear off the entrance to Grays Harbor.

<http://www.seattlepi.com/default/article/Young-humpback-whale-freed-from-crab-pot-gear-5461712.php>

Proposed Oil Terminal in BC Could Increase Strait Tanker Traffic

The number of oil tankers bringing cargos of crude from Alaska along the Strait of Juan de Fuca has decreased in the past few years, according to oil and ship-moving records. A plan for Alberta tar sands crude could increase the number of tankers in the Strain in the.

<http://peninsuladailynews.com/article/20140422/NEWS/304229997/proposed-oil-terminal-in-bc-could-increase-strait-tanker-traffic>

Sediment Flow at Elwha River's Mouth an Outdoor Classroom for University of Washington Students

The mouth of Elwha River and surrounding marine environment served as a classroom for University of Washington students studying how millions of cubic yards of sediment are affecting the local ecosystem.

<http://thedailyworld.com/news/local/quinault-officials-say-seawall-breached-taholah-declare-emergency>

Japanese Retrace Path of History-Making Castaways To Washington Coast, 180 Years Later

Japanese delegation thanked the Makah after retracing the history-making path of three castaways to the Makah Indian Reservation on the Washington coast.

<http://www.kplu.org/post/japanese-retrace-path-history-making-castaways-wash-coast-180-years-later>

NOAA Releases Ocean Acidification Research Plan

NOAA and its partners have released the first federal strategic plan to guide research and monitoring investments that will improve our understanding of ocean acidification, its potential impacts on marine species and ecosystems, and adaptation and mitigation strategies.

<http://www.maritime-executive.com/article/NOAA-Releases-Ocean-Acidification-Research-Plan-2014-03-28>

NOAA-Led Researchers Discover Ocean Acidity is Dissolving Shells of Tiny Snails Off US West Coast

A NOAA-led research team has found the first evidence that acidity of continental shelf waters off the West Coast is dissolving the shells of tiny free-swimming marine snails, called pteropods, which provide food for pink salmon, mackerel and herring.

http://www.noaa.gov/stories/2014/20140430_oceanacidification.html

NOAA Marks the Best Whale Watching Sites on Coast

NOAA's Office of National Marine Sanctuaries and The Whale Trail announced new coastal sites in California where the public can view orcas and other marine mammals from shore.

<http://www.kionrightnow.com/news/local-news/noaa-marks-the-best-whale-watching-sites-on-coast/25848302>

Antarctic Glaciers Melting "Passed Point of No Return"

The vast glaciers of western Antarctic are rapidly melting and losing ice to the sea. The likely result is an estimated rise in global sea levels of 4 feet or more in the coming centuries.

<http://www.kplu.org/post/japanese-retrace-path-history-making-castaways-wash-coast-180-years-later>

Latest National Climate Report Shows Big Impacts in the Northwest

Global climate change is having tangible effects all over the country, including Washington and the greater Northwest, according to the latest National Climate Assessment.

<http://www.kplu.org/post/latest-national-climate-report-shows-big-impacts-northwest>

NOAA Reports Show Strong Economic Gains From Fishing, Continued Improvement in Fish Stocks

According to a new NOAA Fisheries economic report, U.S. commercial and recreational saltwater fishing generated more than \$199 billion in sales in 2012, a gain of seven percent over the previous year, with the economic impact of fishing jobs increasing three percent from 2011 to 2011.

<http://phys.org/news/2014-04-noaa-strong-economic-gains-fishing.html#jCp>

Exxon Valdez Spill Effects Linger 25 Years On

The massive oil spill disaster continues to haunt the people and wildlife of Alaska more than two decades later.

<http://www.aljazeera.com/indepth/features/2014/03/exxon-valdez-spill-25-years-alaska-2014324101725585439.html>

Two National Marine Sanctuaries May More Than Double in Size

In response to public interest, NOAA proposed the expansion of the Cordell Bank and Gulf of the Farallones National Marine Sanctuaries, located off the coast of California.

<http://newswatch.nationalgeographic.com/2014/04/18/two-national-marine-sanctuaries-may-more-than-double-in-size>

WEB SITE (<http://olympiccoast.noaa.gov/>)

Follow the OCNMS on Facebook!

<https://www.facebook.com/usolympiccoastgov>

Please take a few moments to peruse the site. Your feedback is greatly appreciated.

*Comments and suggestions can be sent to
Jacqueline.Laverdure@noaa.gov.*

FUN, OCEAN-RELATED WEB SITES

National Oceanic & Atmospheric Administration

<http://www.noaa.gov/>

National Ocean Service

<http://www.nos.noaa.gov/>

Office of National Marine Sanctuaries

<http://www.sanctuaries.nos.noaa.gov/>

NOAA Marine Debris Program

<http://marinedebris.noaa.gov/>

NOAA Online Media Library

<http://sanctuaries.noaa.gov/photos>

Encyclopedia of National Marine Sanctuaries

<http://www8.nos.noaa.gov/onms/park/>

NOAA Ocean Explorer

<http://oceanexplorer.noaa.gov/>

National Data Buoy Center

<http://www.ndbc.noaa.gov/rmd.shtml>

Washington's Ocean Resources

<http://www.ecy.wa.gov/programs/sea/ocean/index.html>

CoastWatch – West Coast Regional Node

<http://coastwatch.pfel.noaa.gov/>

Northwest Association of Networked Ocean Observing Systems

<http://www.nanoos.org/>

NOAA's Pacific Marine Environmental Laboratory

<http://www.pmel.noaa.gov/>

Learn More About Your Sanctuary

The Sanctuary Office Report is produced bi-monthly by the Olympic Coast National Marine Sanctuary in conjunction with Sanctuary Advisory Council meetings. To learn more about the Sanctuary please visit our web site at: <http://www.olympiccoast.noaa.gov>.

To learn more about the Sanctuary Advisory Council please visit:
http://olympiccoast.noaa.gov/involved/sac/sac_welcome.html

The Office of National Marine Sanctuaries

The Olympic Coast National Marine Sanctuary is one of 14 marine protected areas in the National Marine Sanctuary System encompassing more than 150,000 square miles of marine and Great Lakes waters from Washington State to the Florida Keys, and from Lake Huron to American Samoa. The system includes 13 national marine sanctuaries and the Papahānaumokuākea Marine National Monument. Visit the ONMS web site at: <http://www.sanctuaries.nos.noaa.gov/>

Get involved!

To learn how to get involved in the Sanctuary visit:
<http://olympiccoast.noaa.gov/involved/welcome.html>

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